

Known variously as *Catalina*, *Canso* and *Nomad*, the PBY was one of the U.S. Navy's most useful aircraft during WW II, with more produced than any other flying boat before or since. The first prototype of this long-lived seaplane, originally designated XP3Y-1, was ordered in 1933 and flew two years later. The *Catalina* featured a cantilevered parasol-mounted wing with retractable floats which became the wing tips in flight. The prototype established a new world seaplane distance record in 1935, flying from Norfolk to Coco Solo. The 825-hp engines of the XP3Y were replaced by 900-hp models in the PBY-1's ordered in 1935 with first deliveries to VP-11F in 1936.

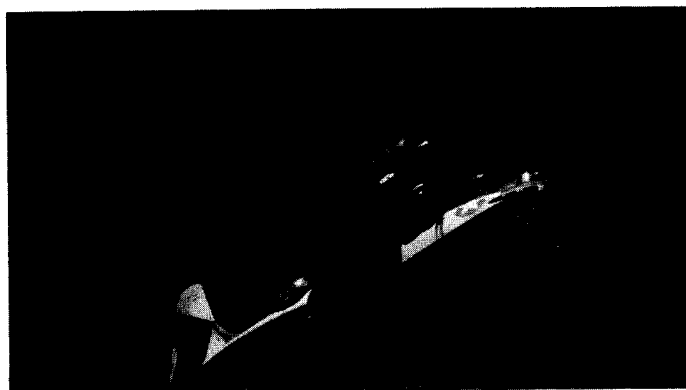
PBY-2's and -3's were ordered that same year and -4's in 1937. The last three copies of the PBY-4 came equipped with the now familiar waist-gunner blisters that were to mark all future versions. By mid-1938, 14 squadrons were flying PBY's. As WW II spread across Europe and then Asia, there were increased demands for a dependable long-range seaplane. Britain ordered PBY's for use in the RAF Coastal Command and named them *Catalinas*. The name stuck and was adopted in the U.S., Canada, Australia and New Zealand. The Free French, Dutch and Russians all procured PBY's. The USSR had first shown an interest in 1937 when it obtained civilian models for mail-cargo service and was licensed to build its own GST version.

In December 1939, the Navy ordered 200 PBY-5's mainly to bolster the Neutrality Patrol. First deliveries were made in September 1940. By the time the U.S. entered WW II, most VP units had -5's. The -5A amphibious version made its appearance in late 1939 and displayed much greater utility with little decline in performance. The *Catalina* saw its first wartime action in the English Channel with the RAF and soon achieved fame by locating the *Bismarck*.

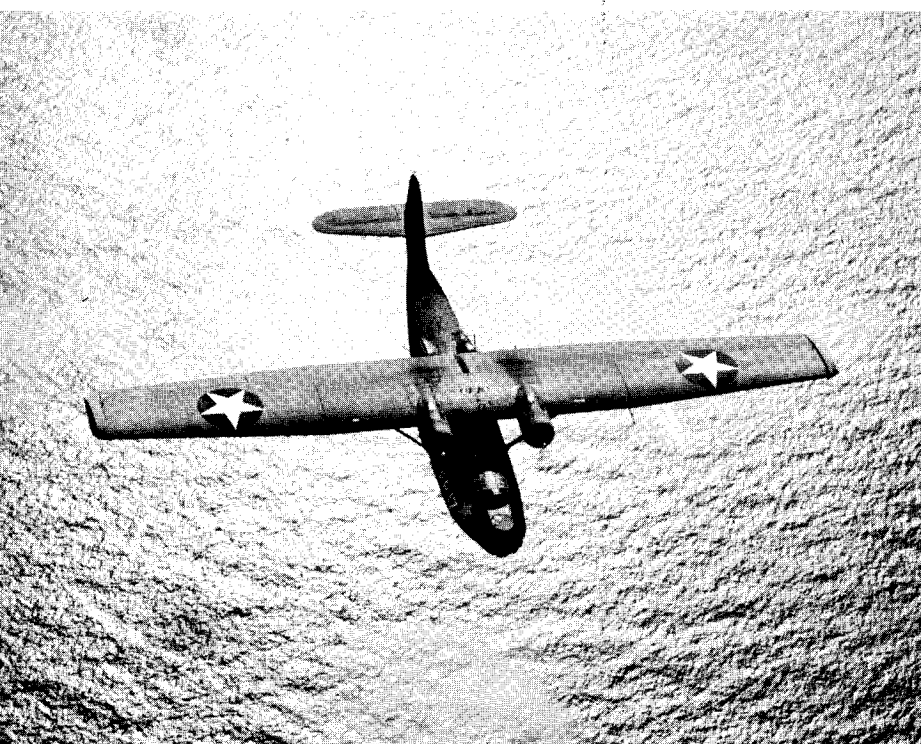
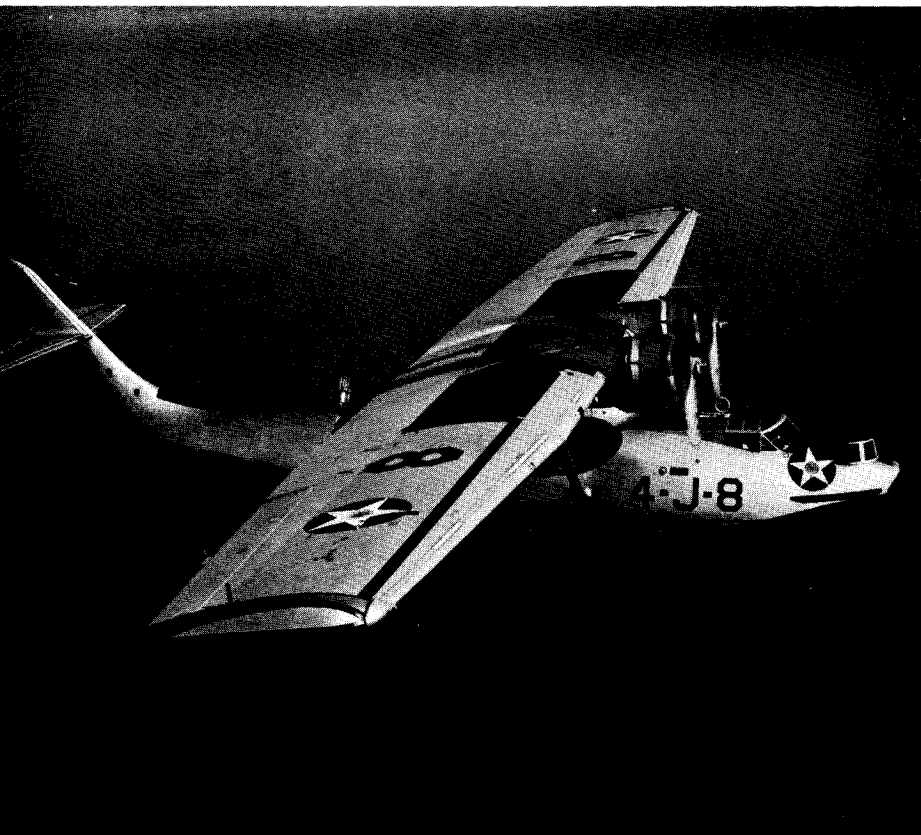
In U.S. service, the PBY filled a variety of roles from ASW and reconnaissance to search and rescue. The Army Air Corps and Coast Guard also employed PBY's in various ways.

Canadian-built PB2B and PBV-1A versions, nicknamed *Cansos* in RCAF service, were produced in large numbers and the Naval Aircraft Factory also went into production with a PBN-1 *Nomad*.

Approximately 3,300 PBY types were produced during the war for the various services and Allies. At their peak employment, PBY's equipped 29 U.S. patrol squadrons. This number dropped rapidly toward war's end as more modern seaplanes and land-based patrol aircraft replaced them. But the *Catalina* survived and for several years was a familiar SAR plane at naval air stations around the country.



alina



June 1972

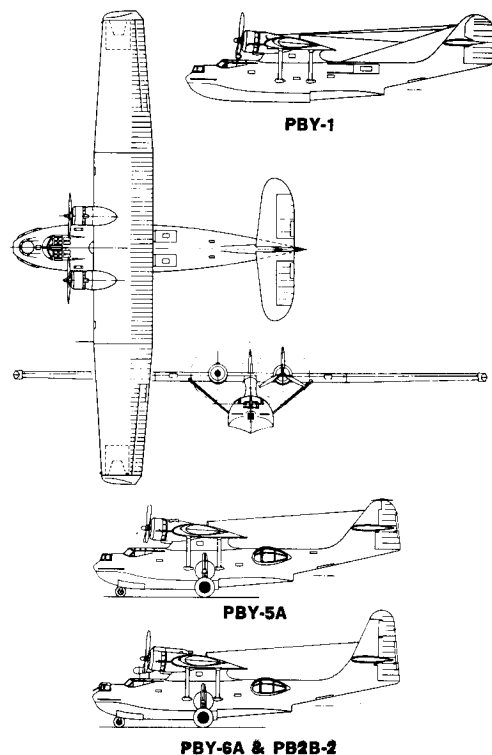
Length		
PBY-1/2		63'6"
PBY-5/5A		63'10"
PBY-6A		62'11"
PBN-1		64'8"
Height		
PBY-1 thru 5		18'6"
PBY-5A		20'2"
PBN-1		21'3"
PBY-6A		22'4"
Wing span		
PBY-1 thru 5		104'0"
PBN-1		104'3"
Engine/horsepower		
PBY-1/2	R-1830-64	900 hp
PBY-3	R-1830-66	1,000 hp
PBY-4	R-1830-72	1,050 hp
PBY-5/5A/6A, PBN-1	R-1830-92	1,200 hp
Maximum speed		
PBY-1		175 mph
PBY-5		189 mph
PBY-5A		180 mph
PBN-1		186 mph
Range		
PBY-1		1,375 nm.
PBY-2		2,110 nm.
PBY-5		2,990 nm.
PBY-5A		2,350 nm.
PBN-1		2,590 nm.
Crew	8 or 9 in wartime	
Armament		
Up to 4,000 lbs. of bombs and/or depth charges on 4 wing stations and a mix of 4 or 5 .30 cal and .50 cal machine guns.		

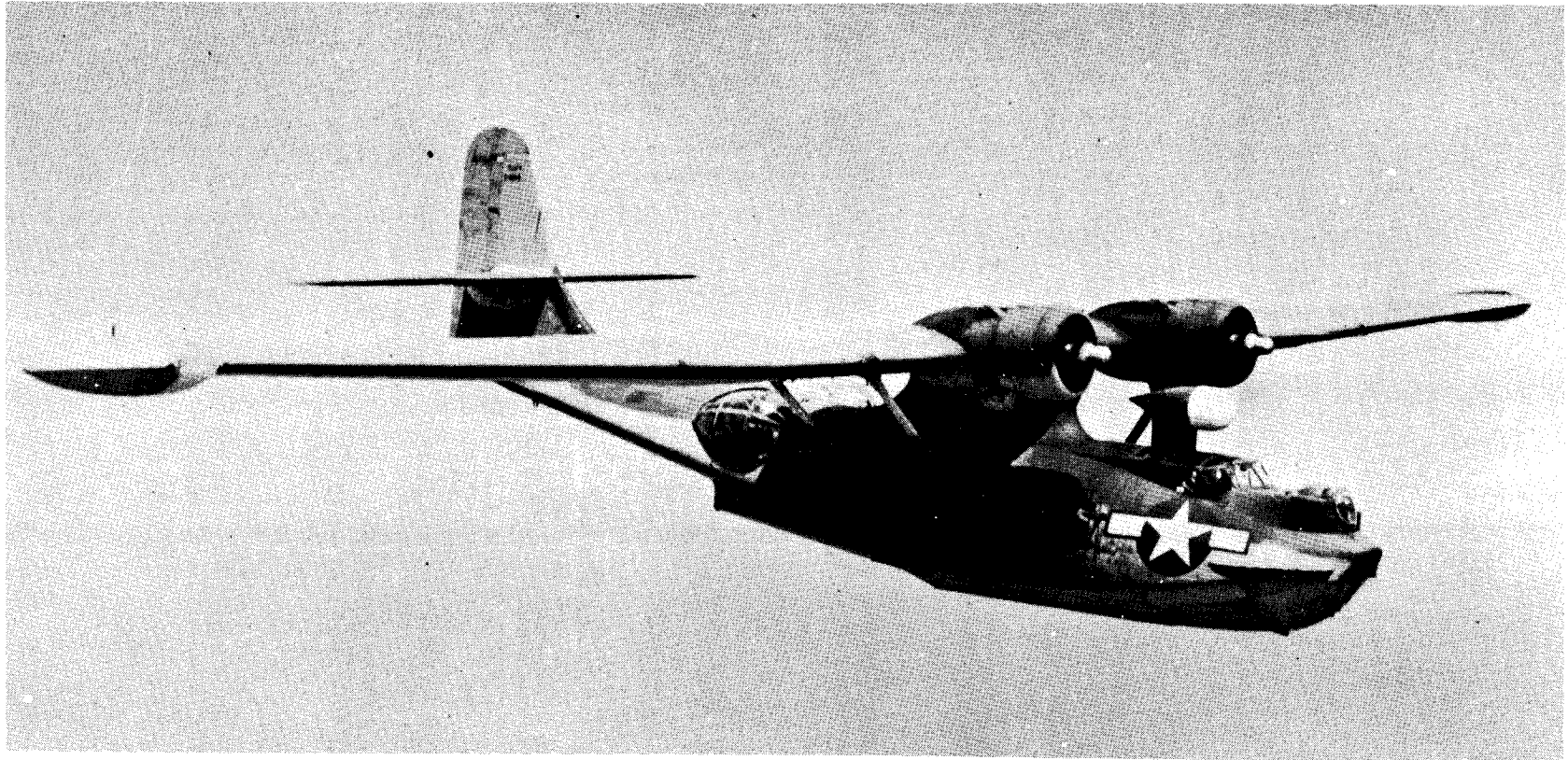
The image contains three line drawings of amphibious aircraft. At the top is a side view of a PBY-1, showing its high-wing configuration, tail boom, and tail fin. Below this is a top-down view of a PBY-5A, highlighting its four wing-mounted engine nacelles and the large tail fin. At the bottom is a side view of a PBY-6A or PB2B-2, which features a more modern, rounded fuselage and a large, rounded tail fin. The drawings are technical and show the aircraft's structural details.

PBY-1

PBY-5A

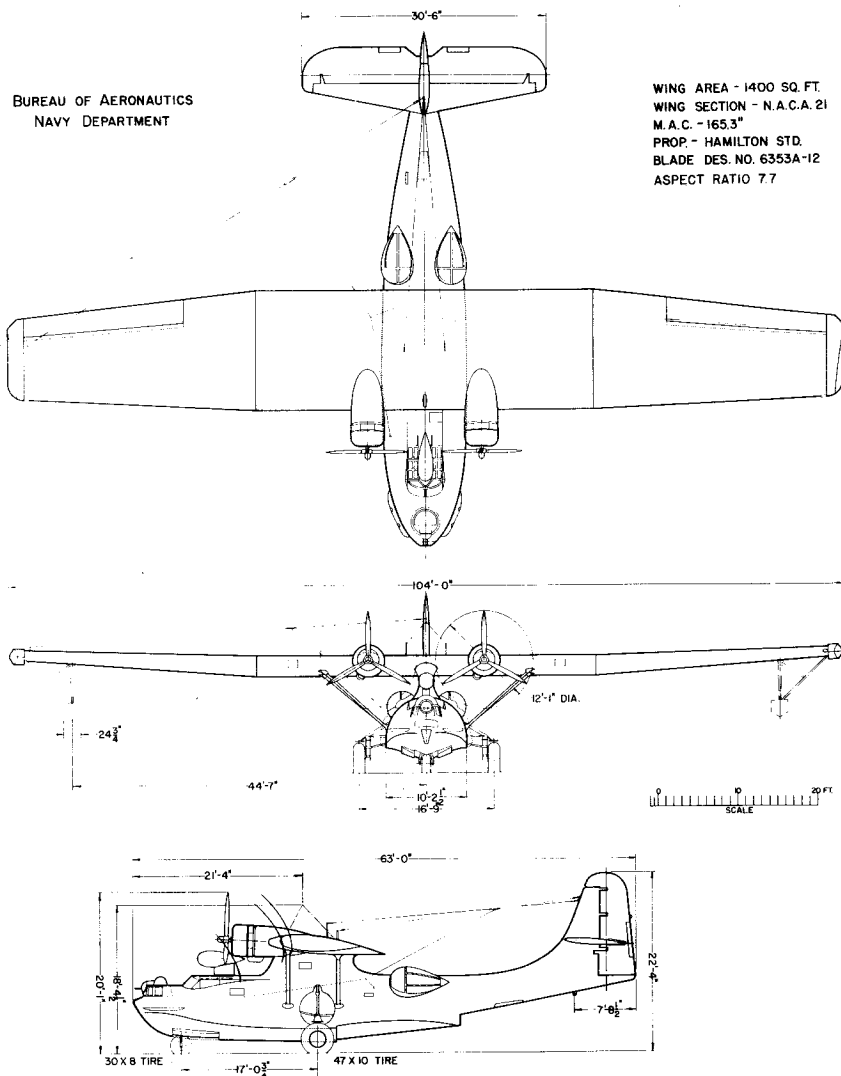
PBY-6A & PB2B-2





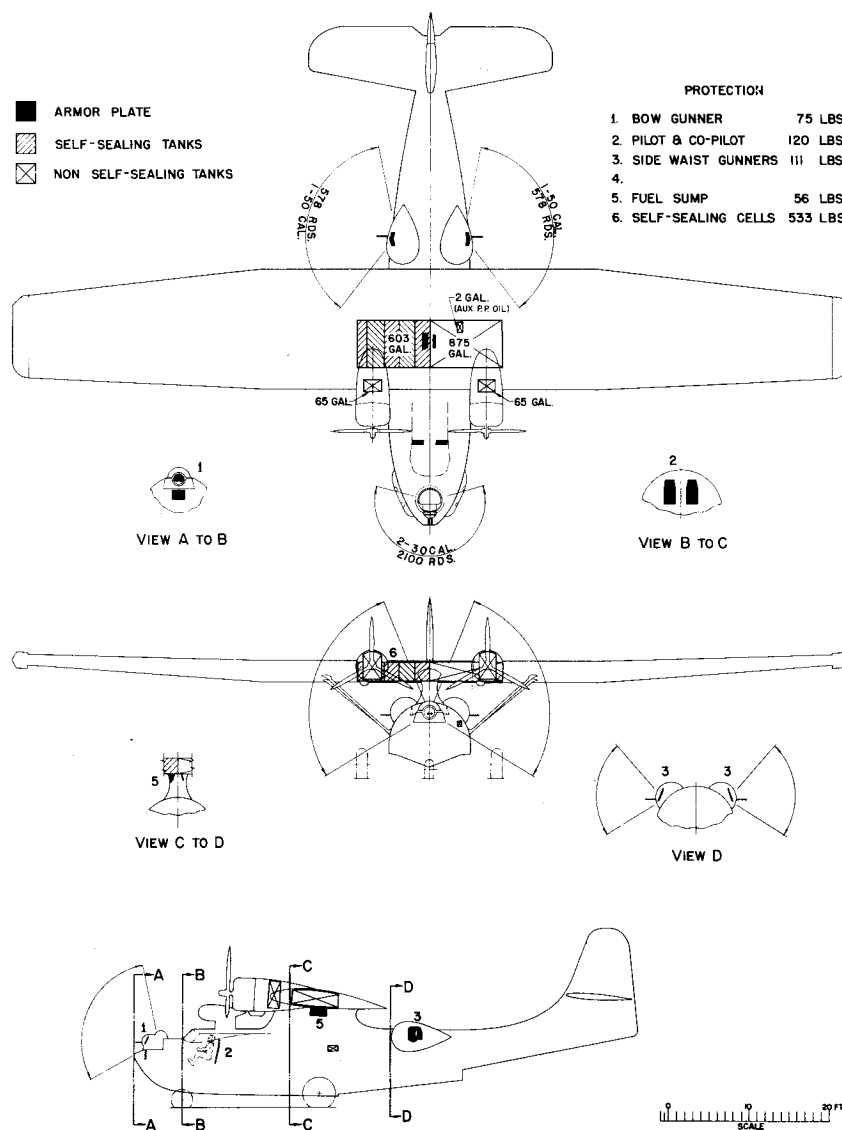
STANDARD AIRCRAFT CHARACTERISTICS
PBY-6A "CATALINA"

BUREAU OF AERONAUTICS
NAVY DEPARTMENT



WING AREA - 1400 SQ. FT.
WING SECTION - N.A.C.A. 21
M.A.C. - 165.3"
PROP. - HAMILTON STD.
BLADE DES. NO. 6353A-12
ASPECT RATIO 7.7

DESCRIPTIVE ARRANGEMENT



- ARMOR PLATE
- SELF-SEALING TANKS
- NON SELF-SEALING TANKS

PROTECTION

1. BOW GUNNER 75 LBS.
2. PILOT & CO-PILOT 120 LBS.
3. SIDE WAIST GUNNERS 111 LBS.
- 4.
5. FUEL SUMP 56 LBS.
6. SELF-SEALING CELLS 533 LBS.

VIEW A TO B

VIEW B TO C

VIEW C TO D

VIEW D

ARMAMENT & TANKS

MISSION AND DESCRIPTION

The Model PBV-6A airplane was designed for use as a patrol airplane, bomber or torpedo airplane. It is also suitable for search and rescue operations and was extensively used for this purpose during the war.

The hull is divided into five main watertight compartments by four bulkheads equipped with watertight doors.

The wing is mounted on a superstructure built up from the hull and incorporates the engine nacelles, fuel and oil tanks and two retractable auxiliary floats. Thermal anti-icing is incorporated in the leading edges of the wing and tail group.

The airplane has no landing flaps or other high-lift devices but due to the relatively low wing loading it has a stalling speed of only 65 knots at maximum gross weight with floats and gear down.

The airplane normally carries a crew of eight.

DIMENSIONS

SPAN.....104'-0"
 LENGTH.....62'-11"
 HEIGHT.....22'-5"
 WING AREA.....1400 sq. ft.
 M.A.C.....165.3"
 TREAD.....16'-9"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	21480.....	
BASIC.....	23388.....	
DESIGN.....	27300.....	3.0
MAX. T.O....	36400.....	2.1
MAX. LAND...	34500.....	

FUEL AND OIL

Gals. - No. Tanks - Location
 603.....5..Wing(protected)
 875.....1..Wing
 300.....2..Wing (drop)
 FUEL GRADE....100/130
 FUEL SPEC.....AN-F-48

OIL

CAPACITY (Gals.).....130
 SPEC.....AN-O-8
 GRADE.....1100-1120

ELECTRONICS

COMMAND.....AN/ARC-5
 LIAISON.....AN/ARC-5
 LORAN.....AN/APN-4
 COMPASS.....SCR-269-F
 ALTIMETER.....AN/APN-1
 MARKER BEACON.....AN/ARN-8
 IFF.....AN/APX-2
 SEARCH.....AN/APS-3
 BTO.....AN/APA-16

POWER PLANT

NO. & MODEL.....(2) R-1830-92
 MFR.....P. & W.
 SUPERCH.....1 Stage, 1 Speed
 PROP.GEAR RATIO.....16:9
 PROP.MFR.....Ham. Std.
 PROP.DES.NO.....6353A-12
 NO.BL./DIA.....3/12'-1"

RATINGS

	Bhp. @	Rpm. @	Alt.
T.O.	1200	2700	SL
NORMAL	1050	2550	7500

SEE NOTE

SPEC NO. N-5098-A

ORDNANCE

No.	Size	GUNS	
		Location	Rds.
2	.30 Cal.	Nose	2100
2	.50 Cal.	Waist	1156

MK 9 sight nose and waist guns

Type	Size	BOMBS	
		Location	No.
Bomb	1000#	Wing	4
Bomb	500#	Wing	4
Bomb	100#	Wing	12
Torp.	MK13-3	Wing	2
D.B.	325#	Wing	8



PERFORMANCE SUMMARY

LOADING CONDITION	(1) A.S.Patrol 4-325#	(2) Patrol 4-1000#	(3) Search Two Tanks	
TAKE-OFF WEIGHT	35860	36400	36300	
Fuel lbs	8778	6756	10578	
Bombs lbs	1300	4000	None	
Wing/Power Loading (A) lbs/sq. ft. lbs/ bhp	25.6/17.1	26/17.3	25.9/17.2	
Stall Speed--Power off kn	68.3 (70.4)	68.8 (71)	68.7 (70.9)	
Stall Speed--Power off - No Fuel kn	59.4 (62)	62.1 (63.8)	57.8 (59.6)	
Stall Speed--Power on kn	65.6 (65.6)	66.1 (66)	66.0 (66)	
Maximum Speed/Alt (B) kn/ft	150/4800	150/4800	152/4800	
Take-off Distance, deck-- calm ft	965	980	970	
Take-off Time sec	77	88	86	
Take-off Distance, Airport ft	2670	2740	2710	
Rate of climb -- sea level (B) ft/min	540	560	530	
Service Ceiling (B) ft	14,100	13,600	13,900	
Time-to-climb 10000 ft. (B) min	24.4	25.7	25.2	
Time-to-climb ft. (B) min				
Combat Range/V av 1500 ft. n.mi/kn	1705/102	1250/104	2075/104	
Combat Radius/V av ft. n.mi/kn	682/102	500/104	830/104	
LOADING CONDITION				
GROSS WEIGHT lbs				
Engine power				
Fuel lbs				
Bombs/Tanks				
Max. speed at sea level kn				
Max. speed ft. kn				
Combat speed/Alt. kn/ft				
Rate of climb SL ft/min				
Ceiling for 500 fpm R/C ft				
Time-to-climb/Alt. min/ft				

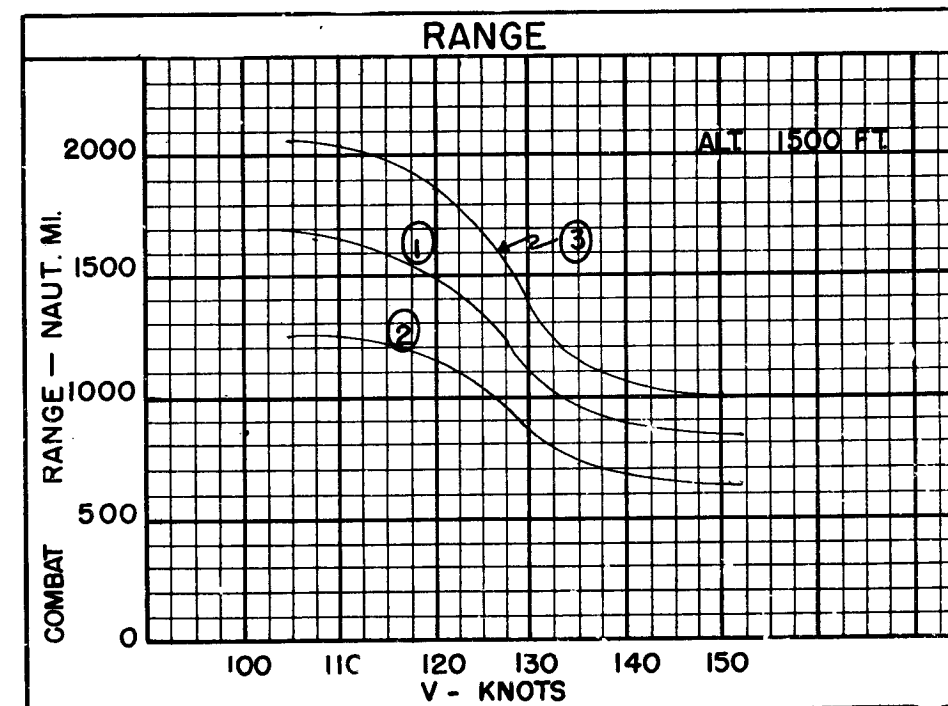
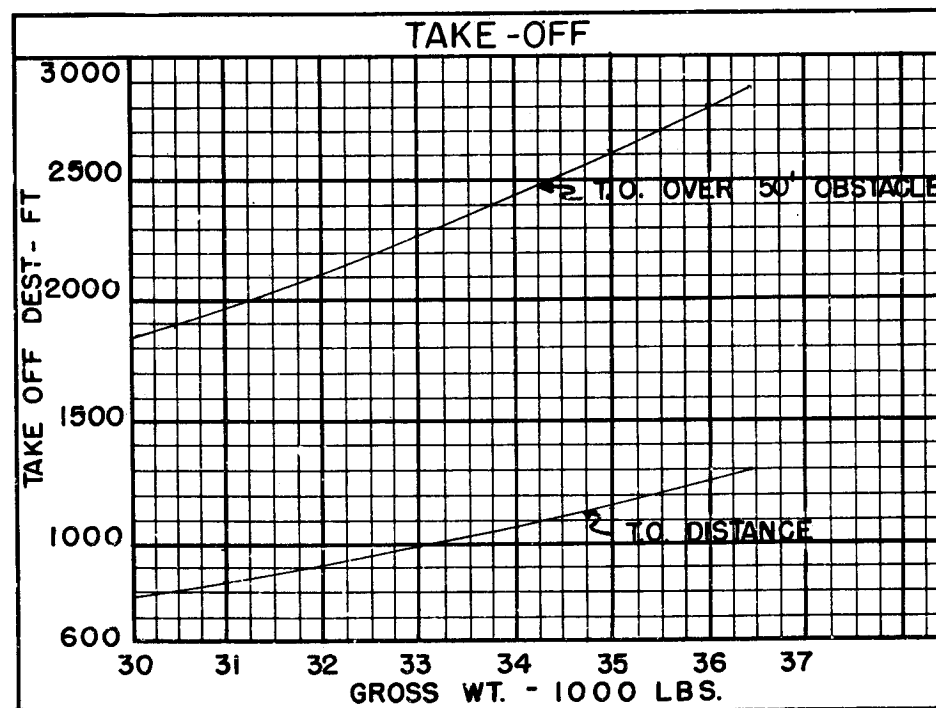
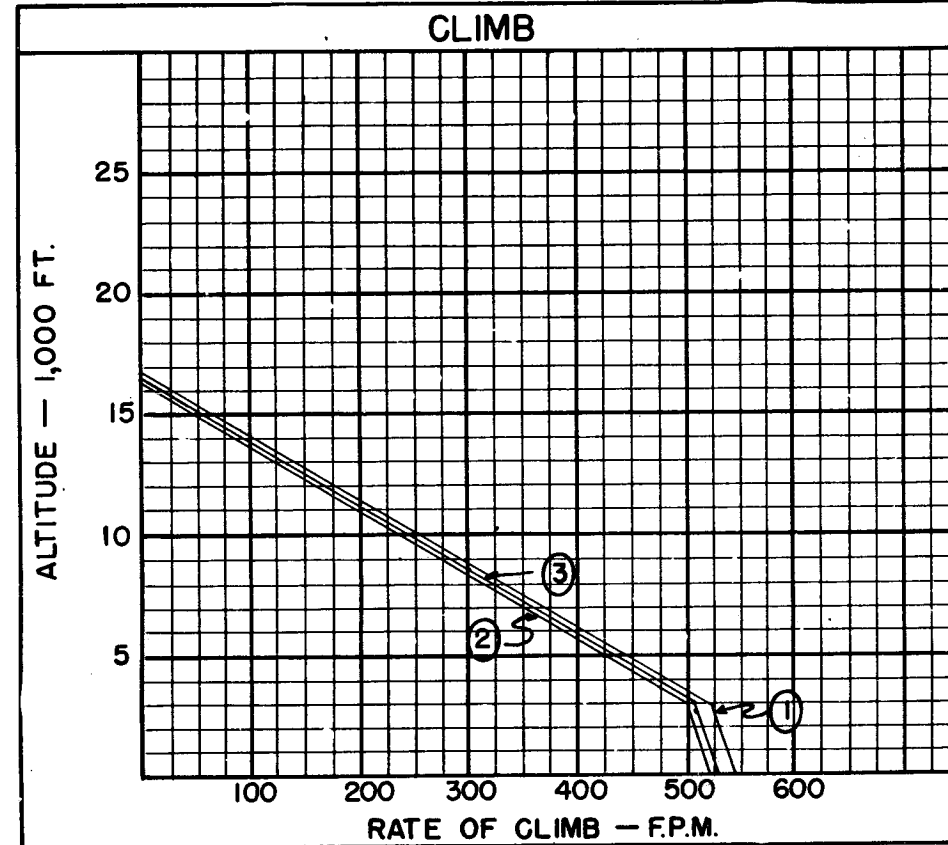
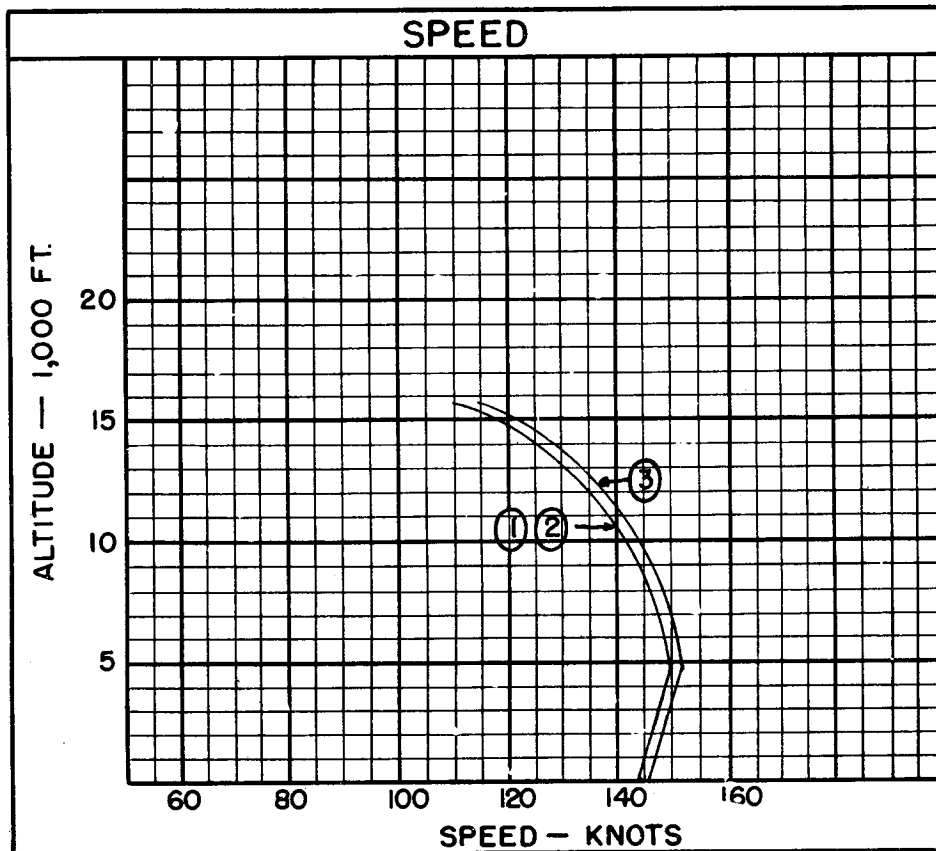
NOTES

- (A) BHP at Maximum Critical Altitude
(B) Normal BHP

Performance is based on flight test.

Range and radius are based on flight test fuel consumption increased 5 per cent.

Figures in parenthesis represent seaplane condition.



NOTES

AN/APS-3 radar aboard in all conditions.

Combat radius is .4 maximum combat range at 1500 ft.

Engine ratings from Flight Test:

	<u>Bhp.</u>	<u>Rpm.</u>	<u>Alt.</u>
T.O.	1200	2700	S.L.
Norm.	1050	2550	3000